We Claim:

1. A method of preparing a gel polymer, comprising the steps of:

   polymerizing monomers in the presence of an imprinter, wherein said imprinter comprises two ionic functional groups connected by a tether, and at least two polymerizable double bonds, to give a gel polymer; and

   treating said gel polymer with a mixture comprising a reagent that breaks a covalent bond in the tether of said imprinter.

2. A gel polymer prepared according to the method of claim 1.

3. A monomer comprised of the following three parts: two or more polymerizable double bonds, two or more functional groups, and a breakable covalent bond that links said functional groups.

4. The monomer of claim 3, wherein the functional groups are selected from the group consisting of a quaternary ammonium group, a secondary amino group, a hydrophobic alkyl group, an aromatic group, an imidazole group, and a methylimidazolinium group.

5. A method of molecularly imprinting polymer networks without using a template, comprising the steps of co-polymerizing the monomer of claim 3 and subsequently breaking the breakable covalent bond.

6. The monomer of claim 3, wherein the breakable bond is a 1,2-glycol bond.

7. The monomer of claim 5, wherein the monomer is 2,3-Dihydroxy-N,N,N'N'-tetramethyl-N,N'-bis{3-[(2-methylacryloyl)amino]propyl}-1,4-butanediaminium dihalide.

8. A method of molecularly imprinting polymer networks without using a template, comprising the steps of co-polymerizing the monomer described in claim 5 and subsequently breaking the breakable covalent bond.

9. A polymer network prepared by the method of claim 7.

10. A method of molecularly imprinting polymer networks without using a template, comprising the steps of co-polymerizing the monomer described in claim 6 and subsequently breaking the breakable covalent bond.

11. A polymer network prepared by the method of claim 9.

12. Separation materials comprising the gel polymer of claim 2.

13. Separation materials comprising the polymer network of claim 8.

14. Separation materials comprising the polymer network of claim 10.

15. Sensors comprising the gel polymer of claim 2.

16. Sensors comprising the polymer network of claim 8.

17. Sensors comprising the polymer network of claim 10.